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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Applicant: Silva	)	Art Unit: 1794
	)	
Serial No.: 10/801,270	)	Examiner: Kiliman
	)	
Filed: March 16, 2004	)	HSJ920040054US1
	)	
For: SYSTEM AND METHOD FOR CONTROLLING	)	June 16, 2008
WRITE TO MINIMIZE ATI AND SQUEEZE	)	750 B STREET, Suite 3120
EFFECTS	)	San Diego, CA 92101
	)	

APPEAL BRIEF

Commissioner of Patents and Trademarks

Dear Sir:

This brief is submitted under 35 U.S.C. §134 and is in accordance with 37 C.F.R. Parts 1, 5, 10, 11, and 41, effective September 13, 2004 and published at 69 Fed. Reg. 155 (August 2004). This brief is further to Appellant's Notice of Appeal filed herewith.

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Page 2**(1) Real Party in Interest**

The real party in interest is Hitachi Global Storage Technologies, Netherlands, B.V.

**(2) Related Appeals/Interferences**

No other appeals or interferences exist which relate to the present application or appeal.

**(3) Status of Claims**

Claims 1-24, of which claims 1, 7, 12, and 16 are independent, are pending and twice rejected, and all rejections of all claims are appealed.

**(4) Status of Amendments**

No amendments are outstanding.

**(5) Summary of Claimed Subject Matter**

As an initial matter, it is noted that according to the Patent Office, the concise explanations under this section are for Board convenience, and do not supersede what the claims actually state, 69 Fed. Reg. 155 (August 2004), see page 49976. Accordingly, nothing in this Section should be construed as an estoppel that limits the actual claim language.

Claim 1 recites a hard disk drive (HDD) (reference numeral 10, figure 1; page 3, line 17) that has a disk (20, figure 1; page 4, line 8) including plural disk portions (22, figure 1; page 5, line 9). A write element (18, figure 1; page 4, line 8) is juxtaposed with the disk for writing data in at least some disk portions. A

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controller (12, figure 1; page 3, line 18) establishes a write current and/or a kick amplitude (page 5, lines 5-8). The write current and/or kick amplitude (block 28, lines 17-19) is associated with the write element for each head for each disk portion (block 26, figure 2; page 5, line 16) to establish an overwrite signal-to-noise ratio to be within a desired range (page 6, lines 1 and 2).

Claim 7 recites a chip (e.g., 14, figure 1; page 4, lines 12-16) for a hard disk drive (HDD) (10, figure 1; page 3, line 17) that has a disk (20, figure 1; page 4, line 8) including plural disk portions (22, figure 1; page 5, line 9) and a write element (18, figure 1; page 4, line 8). The chip includes logic means (32, figure 3, page 6, lines 11-15) for accessing a table correlating at least one write parameter to head/disk portion combinations. Logic means (38, figure 3; page 7, lines 8 and 9) are provided for establishing, for at least one head/disk portion combination, at least one of: a write current, or a kick amplitude.

Claim 12 recites a chip (e.g., 14, figure 1; page 4, lines 12-16) for a hard disk drive (HDD) (10, figure 1; page 3, line 17) that has a disk (20, figure 1; page 4, line 8) including plural disk portions (22, figure 1; page 5, line 9). The chip has means (block 28, figure 2; page 6, lines 5-10) for storing at least one value for each head for each disk portion which can be written to by the head, with the at least one value representing baseline write current and/or kick amplitude. Means (38, figure 3; page 7, lines 8 and 9) are also provided for using the value to generate a write current for the head.

Claim 16 sets forth a logic element (e.g., 14, figure 1; page 4, lines 12-16) for a hard disk drive (HDD) (10, figure 1; page 3, line 17) that has a disk (20, figure 1; page 4, line 8) including plural disk portions (22, figure 1; page 5, line 9) and a write element (18, figure 1; page 4, line 8). The logic element holds logic including accessing a table (block 28, figure 2; page 6, lines 5-10) correlating write currents and

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kick amplitudes to head/disk portion combinations and establishing, for at least one head/disk portion combination, at least one of: a write current and/or a kick amplitude (38, figure 3; page 7, lines 8 and 9).

(6) **Ground of Rejection to be Reviewed on Appeal**

All pending claims (1-24) have been rejected under 35 U.S.C. §102 as being anticipated by Simozato, USPN 6,064,534.

(7) **Argument**

**Anticipation Rejections**

**All Claims**

The rejection alleges that all claims are taught by Simozato, "column 2, lines 1-55, column 5, lines 5-55, column 6, lines 34-67, col. 8, lines 5-28, col. 12, lines 1-24, claims", which is the sole substantive comment in the entire Office Action.

The present Office Action fails to mention any claim element. The present Office Action fails to point to any particular element in Simozato. Accordingly, the present Office Action fails to identify in the written record the correlations being relied on between Simozato and the claims being rejected. As a consequence, the rejections fail to demonstrate compliance with MPEP §2131 (to support an anticipation rejection, every claim element must be taught or inherent in a single prior art reference). Compliance with the MPEP is required.

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Simozato fails to mention "kick amplitude" or any cognizable synonyms thereof. Perforce, then, the rejections depend on the write current teachings of Simozato.

Deconstructing the cited portions of Simozato *seriatim*, the relied-upon portion of column 2 includes background discussion regarding the necessity of getting write current just right, to balance generating undesirable cross-talk while desirably overwriting data. Simozato also recognizes that the right write current varies with temperature, col. 2, lines 25-30. Column 2 also mentions that write currents can vary by head, lines 48-54. Nothing at all, however, about the write current being associated with the write element for each head *for each disk portion* to establish an overwrite signal-to-noise ratio to be within a desired range as required by, e.g., Claim 1.

Turning to col. 5, lines 5-55, Simozato again teaches in relevant part that write current may be established for each head, and that it can change with temperature - but not with individual disk portions.

Col. 6, lines 34-67 describe a generic HDD and add nothing of relevance to analysis.

Col. 8, lines 5-28 discuss storing write current for each head and each temperature and thus add nothing of further relevance to analysis.

Col. 12, lines 1-24 "necessary and minimum optimum write currents can be obtained for the respective magnetic heads and magnetic disks, for the respective cylinder positions", lines 11-14, but this concept is never explained or further described. What the "cylinder positions" are in "respect to" is left to guesswork. How these cylinder positions are used and the write currents are "obtained", the principles by which the cylinder positions are used and the write currents are "obtained", when the cylinder positions are used and the write currents are "obtained", and how, once obtained, the cylinder positions are used to establish write current are never mentioned. This single enigmatic reference falls within the proscription of the Federal Circuit that "to

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render a later invention unpatentable for obviousness, the prior art must enable the later invention", noting that the question wasn't whether the prior art enabled itself but rather whether it enabled the invention being rejected, In re Kumar, 418 F.3d 1361 (Fed. Cir. 2005).

The Simozato claims, not surprisingly, focus on write current establishment by head and temperature and thus add nothing further of relevance to analysis.

The comments above apply *mutatis mutandis* to independent Claims 7, 12, and 16.

#### **Dependent Claims 2, 15, 17**

The Office Action fails to mention, as do the relied-upon portions of Simozato, the limitations of dependent Claims 2, 15, and 17 (establishing both a write current and a kick amplitude) rendering the claims patentable.

#### **Dependent Claims 3, 9, 18**

The Office Action fails to mention, as do the relied-upon portions of Simozato, the limitations of dependent Claim 3 (the desired range is approximately -22db to -24 db) and dependent Claims 9 and 18 (kick amplitude and write current establish an overwrite signal-to-noise ratio within a desired range), rendering these claims patentable.

#### **Dependent Claims 4 and 8 and Independent Claims 7 and 16**

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The Office Action fails to mention, as do the relied-upon portions of Simozato, the limitations of dependent Claims 4 and 8 and independent Claims 7 and 16 (accessing a table correlating write current and/or kick amplitude to disk locations), rendering these claims patentable.

**Dependent Claims 5, 10, 19**

The Office Action fails to mention, as do the relied-upon portions of Simozato, the limitations of dependent Claims 5, 10, and 19 (dynamically varying the look-up values of write currents and/or kick amplitudes), rendering these claims patentable.

**Dependent Claims 21-24**

The Office Action fails to mention, as do the relied-upon portions of Simozato, the limitations of dependent Claims 21-24 (the write current and kick amplitudes are varied using an equation having a slope value, with the slope value being a first value when temperature is above a threshold and a second value when temperature is below the threshold), rendering these claims patentable.

Respectfully submitted,



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#### APPENDIX A - APPEALED CLAIMS

1. A hard disk drive (HDD), comprising:  
  
at least one disk including plural disk portions;  
  
at least one write element juxtaposed with the disk for writing data in at least some disk portions; and  
  
a controller establishing at least one of: a write current, or a kick amplitude, the write current and/or kick amplitude being associated with the write element for each head for each disk portion to establish an overwrite signal-to-noise ratio to be within a desired range.
2. The HDD of Claim 1, wherein the controller establishes both a write current and a kick amplitude for each write element for each portion.
3. The HDD of Claim 1, wherein the desired range is approximately -22db to -24 db.
4. The HDD of Claim 1, wherein the controller accesses a table correlating write current and kick amplitude to head/portion combinations.
5. The HDD of Claim 4, wherein the controller dynamically varies looked-up write currents and kick amplitudes.

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6. The HDD of Claim 5, wherein the write current and kick amplitudes are varied as a function of sensed temperature.

7. A chip for a hard disk drive (HDD) having at least one disk defining plural disk portions and at least one write element for writing data to the disk, comprising:

logic means for accessing a table correlating at least one write parameter to head/disk portion combinations; and

logic means for establishing, for at least one head/disk portion combination, at least one of: a write current, or a kick amplitude.

8. The chip of Claim 7, wherein the table correlates two write parameters to each head/portion combination.

9. The chip of Claim 7, wherein kick amplitude and write current establish an overwrite signal-to-noise ratio within a desired range.

10. The chip of Claim 7, comprising means for dynamically varying looked-up write currents and kick amplitudes.

11. The chip of Claim 7, comprising means for dynamically varying looked-up write currents and kick amplitudes as a function of sensed temperature.

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12. A chip for a HDD including at least one head and at least one disk juxtaposed with the head and defining plural disk portions, comprising:

means for storing at least one value for each head for each disk portion which can be written to by the head, the at least one value representing: baseline write current and/or kick amplitude; and  
means for using the value to generate a write current for the head.

13. The chip of Claim 12, wherein the HDD includes at least one temperature sensor, and the controller chip further comprises:

means for varying the value based on a signal from the temperature sensor to establish a temperature-corrected value; and  
means for applying a signal characterized by the temperature-corrected value to the head.

14. The chip of Claim 13, wherein the means for storing stores, for each head for each portion which can be operably associated with the head, a kick amplitude value and a baseline write current value.

15. The chip of Claim 14, wherein the means for varying varies both values.

16. A logic element for a hard disk drive (HDD) having at least one disk defining plural disk portions and at least one write element for writing data to the disk, the logic element holding logic embodying method acts comprising:

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accessing a table correlating write currents and kick amplitudes to head/disk portion combinations; and

establishing, for at least one head/disk portion combination, at least one of: a write current and/or a kick amplitude.

17. The logic element of Claim 16, wherein the logic establishes both of a write current and a kick amplitude for each head/portion combination.

18. The logic element of Claim 17, wherein the kick amplitude and write current establish an overwrite signal-to-noise ratio within a desired range.

19. The logic element of Claim 17, wherein the logic comprises dynamically varying looked-up write currents and kick amplitudes.

20. The logic element of Claim 17, wherein the logic comprises means for dynamically varying looked-up write currents and kick amplitudes as a function of sensed temperature.

21. The HDD of Claim 6, wherein the write current and kick amplitudes are varied using an equation having a slope value, the slope value being a first value when temperature is above a threshold, the slope value being a second value when temperature is below the threshold.

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22. The chip of Claim 11, wherein the write current and kick amplitudes are varied using an equation having a slope value, the slope value being a first value when temperature is above a threshold, the slope value being a second value when temperature is below the threshold.

23. The chip of Claim 15, wherein the write current and kick amplitudes are varied using an equation having a slope value, the slope value being a first value when temperature is above a threshold, the slope value being a second value when temperature is below the threshold.

24. The logic element of Claim 20, wherein the write current and kick amplitudes are varied using an equation having a slope value, the slope value being a first value when temperature is above a threshold, the slope value being a second value when temperature is below the threshold.

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**APPENDIX B - EVIDENCE**

None (this sheet made necessary by 69 Fed. Reg. 155 (August 2004), page 49978.)

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**APPENDIX C - RELATED PROCEEDINGS**

None (this sheet made necessary by 69 Fed. Reg. 155 (August 2004), page 49978.)

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